

EXHIBIT 5

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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

NETLIST, INC.,)	Case No. 3:09-cv-05718-RS
)	
Plaintiff,)	PLAINTIFF NETLIST, INC.’S NOTICE
v.)	OF MOTION AND MOTION FOR LEAVE
)	TO AMEND INFRINGEMENT
GOOGLE LLC,)	CONTENTIONS
)	
Defendant.)	Hearing Date: June 23, 2022
)	Time: 1:30 PM

NOTICE OF MOTION

To all parties and their attorneys of record:

Please take notice that on June 23, 2022, or as soon thereafter as the matter may be heard, in Courtroom 3 of the above-entitled court, located at 50 Golden Gate Avenue, San Francisco, CA 94102, or remotely should the Court so order, Plaintiff Netlist, Inc. (“Netlist”), by and through its undersigned counsel, will move the Honorable Richard Seeborg for an order granting Netlist leave to amend its infringement contentions served on Defendant Google LLC (“Google”) on June 18, 2021.

Specifically, Netlist moves to amend its infringement contentions to make clear that it is accusing Google’s 8- and 16-rank DDR4 DIMMs. Good cause exists for Netlist’s proposed amendment because Netlist could not have discovered such information regarding Google’s accused products at the time Netlist served its currently operative infringement contentions and Google would not suffer any prejudice as a result of Netlist’s proposed amendment.

This motion is made under Patent L.R. 3-6 and based on this notice, the following points and authorities, all other papers and pleadings on file, and any further arguments that may be presented in reply or at the hearing of this motion.

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MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION AND FACT BACKGROUND

Plaintiff Netlist, Inc. (“Netlist”) respectfully requests the Court grant Netlist leave to amend its infringement contentions to expressly list 8- and 16-rank DDR4 DIMMs.

On February 17, 2021, the Court lifted the 10-year stay of this case pending the reexamination of Netlist’s U.S. Patent No. 7,619,912 (“the ’912 patent”). Pursuant to the Court’s Order, Netlist served its Amended Disclosure of Asserted Claims and Infringement Contentions (“Amended Infringement Contentions”) on Google by June 18, 2022. Dkt. 170-3. The Amended Infringement Contentions mapped the claims of the ’912 patent, including claim 16, on DDR4 NVDIMM, DDR4 LRDIMM, and DDR4 RDIMM products. *Id.* at 6. Netlist did not limit its assertion to only 4-rank DDR4 DIMMs, but it encompassed all ranks. Specifically, the contentions stated:

Claim 16 of the ’912 Patent: The memory modules incorporated in Google’s servers include, without limitation, memory modules compliant with certain portions of the JEDEC Solid State Technology Association (“JEDEC”) standards and specifications for Double Data Rate 4 (“DDR4”) Synchronous DRAM (“SDRAM”) Registered Dual In-Line Memory Modules (“RDIMMs”), DDR4 SDRAM Load Reduced Dual In-Line Memory Modules (“LRDIMMs”) and DDR4 SDRAM Non-Volatile Dual In-Line Memory Modules (“NVDIMMs”), and *products that operate in substantially similar manner*.

Id. Whether 4, 8 or 16 ranks are used, the products operate in an identical fashion as to claim 16.

Google subsequently moved to strike Netlist’s assertion of claim 16, Dkt. 153, which this Court denied. Dkt. 258 at 44. Although not fully briefed, Google alleged that 8-rank and 16-rank DIMMs were not accused. It made this argument to mitigate its failure to identify 8-rank and 16-rank DDR4 DIMMs on the list of products as to which it sought intervening rights. The Court noted in its order that “[a]t present, . . . Netlist has only accused the five categories of 4-Rank DIMMs addressed in Google’s motion.” Dkt. 258 at 36. In light of this passage from the opinion, and in an excess of caution, Netlist files this motion to amend its infringement contentions to resolve any dispute on this issue.

1 After this case reopened, Judge Spero ordered Google to provide discovery regarding
2 Google's current use of memory modules. The history is as follows. In April 2021, Netlist served
3 discovery requests regarding Google's memory modules purchased or used from November 17,
4 2008 through the present. Specifically, Netlist sought the category of each DIMM (e.g. FBDIMM),
5 the category of DRAM on each DIMM (e.g. DDR2), and further detail regarding the design and
6 operation of each DIMM. Ex. 1 at 6-7 (ROGs #1-2); Ex. 2 at 6-7 (RFPs #1-2). Because Google
7 does not publicly disclose the design and type of memory modules it uses, and [REDACTED]
8 [REDACTED], Netlist's discovery
9 requests were framed in terms of technical characteristics relevant to the patent in suit. Exs. 1 & 2
10 at 2 ("The term 'Memory Module' refers to a printed circuit board which is connectable to a
11 computer system, with a plurality of double-data-rate ('DDR') memory devices, and at least one
12 circuit that sends a clock signal.").

13 Nevertheless, Google repeatedly refused to comply with its obligations to provide relevant
14 information regarding the accused infringing products in response to Netlist's discovery requests.
15 For example, Google's initial discovery responses prompted the parties to submit a joint letter based
16 on Google's deficient responses. Dkt. 135. Netlist explained that the "design history of these
17 memory modules" and "the operation . . . of historical and current devices" was relevant to the
18 "substantial preparation" factor for equitable intervening rights. *Id.* at 2. The Court ordered Google
19 to respond to Netlist's intervening rights contention interrogatory (ROG #3) "in full." Dkt. 145.
20 The Court further recognized that Netlist was entitled to "**very broad**" discovery regarding Google's
21 use of DIMMs as of February 8, 2021 to probe Google's equitable intervening rights defense. Dkt.
22 148 at 5:19-6:4 ("[W]illfulness is a question under *Visto*, and so it seems to me that that sweeps in
23 a lot of the information that is here and requested. So I think you get much broader discovery as to
24 the modules that are used from February 8, 2021—their structure, their changes, things about
25 infringement. . . .") (emphasis added). In a stipulation later filed with the Court, Google agreed to
26 provide "a complete response to Netlist's contention interrogatory on intervening rights . . . on July
27 16 (as to equitable intervening rights)" and "a complete document production based on a reasonable
28 investigation relevant to equitable intervening rights by July 30." Dkt. 149 at 2.

1 Despite the Court's order and Google's stipulation, Google omitted important information.
2 After months of back and forth, including lead-to-lead meet and confers, and after receiving
3 Netlist's discovery dispute letters proposed to be submitted to the Magistrate Judge, on October 12,
4 2021, Google ultimately disclosed information regarding [REDACTED]
5 [REDACTED]. Google, however,
6 continued to contend that Netlist's Amended Infringement Contentions do not accuse 8- and 16-
7 rank DIMMs. *See* Ex. 3 at 81–82 (Google's Third Supplemental R&Os to Netlist's Rog No. 3)
8 (“[REDACTED]
9 [REDACTED] while Google maintains its objection that 8-rank
10 and 16-rank DIMMs are not accused products in this case based on Netlist's June 18, 2021 Amended
11 Infringement Contentions and therefore not relevant to this case.”).

12 Pursuant to Patent L.R. 3.6, Netlist hereby asks the Court for permission to make limited
13 amendments to its infringement contentions to remove any dispute that the contentions encompass
14 *all* DDR4 DIMMs, regardless of rank, based on new information Netlist learned from discovery and
15 this Court's recent decision interpreting the scope of Netlist's Amended Infringement Contentions.
16 Netlist's proposed amendment does not assert new claims of the '912 patent or change its
17 infringement theories or add new ones. Google would not suffer any prejudice due to Netlist's
18 proposed amendments because the 8-rank and 16-rank DIMMs operate substantially similarly to 4-
19 rank products, which Google contends are the only DDR4 products explicitly accused in the
20 Amended Infringement Contentions, Dkt. 170-3 at 4, and because this case is still at an early stage
21 such that Google still has ample opportunities to conduct discovery, and prepare its invalidity
22 contentions and claim construction briefing.

23 **II. LEGAL STANDARD**

24 A party may amend the infringement contentions “by order of the Court upon a timely
25 showing of good cause.” Patent L.R. 3-6. Good cause includes “[r]ecent discovery of nonpublic
26 information about the Accused Instrumentality which was not discovered, despite diligent efforts,
27 before the service of the Infringement Contentions.” Patent L.R. 3-6(c). Amendment is allowed
28 when the moving party shows that: (1) it was diligent in amending its contentions; and (2) the

1 nonmoving party will not suffer prejudice if the motion is granted. *Illumina Inc. v. BGI Genomics*
2 *Co.*, No. 20-cv-1465, 2021 WL 2400941, at *3 (N.D. Cal. June 11, 2021) (citation omitted).

3 Patent Local Rule 3-6(c) expressly contemplates that infringement contentions may be
4 amended based on nonpublic information obtained in discovery.” *Finjan, Inc. v. Qualys Inc.*, No.
5 18-cv-7229, 2020 WL 5569704, at *2 (N.D. Cal. Sept. 17, 2020). The Patent Local Rules are “not
6 a straitjacket into which litigants are locked from the moment their contentions are served.”
7 *Comcast Cable Commc’ns Corp., LLC v. Finisar Corp.*, No. 06-cv-4206, 2007 WL 716131, at *2
8 (N.D. Cal. Mar. 2, 2007). District courts have wide discretion to grant leave to amend. *Tech.*
9 *Licensing Corp. v. Blackmagic Design Pty Ltd.*, No. 13-cv-5184, 2014 WL 5499511, at *2 (N.D.
10 Cal. Oct. 30, 2014) (collecting cases); *see also Finjan, Inc. v. Proofpoint, Inc.*, No. 13-cv-5808,
11 2015 WL 9460295 (N.D. Cal. Dec. 23, 2015) (“A district court has wide discretion in enforcing the
12 Patent Local Rules.”).

13 **III. ARGUMENT**

14 **A. Netlist Was Diligent in Amending Its Infringement Contentions**

15 “[T]he diligence required for showing of good cause has two phases: (1) diligence in
16 discovering the basis for amendment; and (2) diligence in seeking amendment once the basis for
17 amendment has been discovered.” *Positive Techs., Inc. v. Sony Elecs., Inc.*, No. 11-cv-2226, 2013
18 WL 322556, at *2 (N.D. Cal. Jan. 28, 2013) (citation omitted). “In considering the party’s diligence,
19 the critical question is whether the party could have discovered the new information earlier had it
20 acted with the requisite diligence.” *Illumina*, 2021 WL 2400941, at *3 (quotation omitted).
21 “However, good cause ‘does not require perfect diligence.’” *THX Ltd. v. Apple, Inc.*, No. 13-cv-
22 01161, 2016 WL 1718137, *2 (N.D. Cal. Apr. 29, 2016) (quoting *Fujifilm Corp. v. Motorola*
23 *Mobility LLC*, No. 12-cv-03587, 2014 WL 491745, at *4 (N.D. Cal. Feb. 5, 2014)).

24 **1. Netlist Acted Diligently in Discovering the Basis of Its Amendment**

25 After this case reopened on February 17, 2022, Netlist and Google submitted a joint case
26 management conference statement on March 4, 2021. On March 11, 2021, the Court held a case
27 management conference and set deadlines for the parties to submit briefs on Google’s intervening
28 rights defense and for Netlist to amend its infringement contentions. Dkts. 116, 117.

1 Because memory technology had drastically evolved during the 10-year stay of this case,
2 and because Google's use of specific types of memory modules and servers is confidential
3 information within Google's exclusive possession, the parties agreed to conduct limited discovery
4 regarding Google's current use of memory modules. *See* Dkt. 115 at 3-4. On March 10, 2021,
5 Netlist's counsel asked Google to provide answers to the following questions:

6 What types of memory modules is Google currently making, having made, and/or
7 purchasing?

8 Dkt. 170-7 (Mar. 10, 2021 email from counsel for Netlist to counsel for Google regarding Google's
9 current use of memory modules). Google never substantively responded to these questions. On
10 April 19, 2021, Netlist served interrogatories and requests for production on Google, once again
11 asking Google to provide detailed information of regarding its current use of DIMMs. *See e.g.*, Dkt.
12 212-9 at 6 (requesting Google provide certain information regarding "Memory Modules that Google
13 has purchased, made, used, installed, operated, sold, offered to sell in the United States for the period
14 of November 17, 2008 through February 7, 2021"). Netlist defined "Memory Modules" broadly as
15 referring to "a printed circuit board which is connectable to a computer system, with a plurality of
16 double-data-rate ('DDR') memory devices, and at least one circuit that sends a clock signal." Ex. 1
17 at 2. Among other things, Netlist asked Google to provide information sufficient to fully describe:

- 18 • The category of the Memory Module (e.g., FB DIMM) and the category of the
19 DRAM on the module (e.g., DDR2, DDR 3, DDR 4, DDR 5)
- 20 • The design and operation of all memory and/or storage devices and circuit
21 and/or logic elements on the Memory Module;
- 22 • The begin and end design dates for the Memory Module;
- 23 • The extent the design has changed, how it has changed, and when such change
24 was made;
- 25 • The date of first commercial use of the Memory Module;
- 26 • To the extent any portion of the Memory Module complies with a JEDEC
27 Standard, identify the relevant portion of the Standard;
- 28 • The date(s) of purchase, manufacture, installment, and/or sale of the Memory
Module; and

- The suppliers of each of the components in the Memory Module, and the assembler of the Memory Module.

Id. at 6.

But Google’s initial written responses failed to disclose *any* of this information. Instead, Google used the Court’s scheduling order setting deadlines for the parties to brief Google’s intervening rights defenses as basis to refuse to comply with its discovery obligation. Dkt. 213-3 at 6 (Google’s May 19, 2021 R&Os to Netlist’s Rogs) (“[T]he parties requested, and the Court granted, a staged resumption of this case where Netlist would first serve amended infringement contentions and then the parties would brief intervening rights. D.I. 115 at 5-6; D.I. 117. Other deadlines, if needed, would follow the Court’s intervening rights determination.”).

In response to Google’s delay tactics and resistance to complying with its discovery obligations, Netlist served its amended infringement contentions on a rolling basis to provide Google notice of the scope of Netlist’s claims; sent several letters raising specific deficiencies in Google’s production; and submitted the parties’ discovery dispute to Magistrate Judge Spero. *See* Dkt. 135 (Joint Letter to Magistrate Judge Spero). On July 2, 2021, Google served its supplemental responses and objections to Netlist’s Interrogatory No. 3, disclosing, for the first time, [REDACTED]. On July 14 and July 30, 2021, Google made two sets of document productions. Netlist diligently reviewed Google’s production and identified several documents that indicated [REDACTED]. Google, however, had not disclosed this information in its previous discovery responses. Netlist further noted that the disclosed memory modules used by Google did not correspond to public information about the scope of Google’s business.

On August 20, 2021, counsel for Netlist asked Google to confirm whether Google was “excluding 8-Rank and 16-Rank DIMMs from its responses.” Ex. 6 at 2 (August 20, 2021 Email from Strabone to Tse). On August 30, 2021, Google responded that Netlist had not accused 8- and 16-rank DIMMs in the Amended Infringement Contentions, and therefore refused to provide discovery as to these products. Ex. 6 at 1 (August 30, 2021 Acharya email to Strabone) (“Second,

1 Netlist's infringement contentions are limited to 4-Rank devices only, as Netlist only charts the
2 JEDEC specifications relevant to 4-Rank devices in its contentions. If Netlist believed that 8-Rank
3 and 16-Rank DIMMs have relevance in this case, Netlist should have charted the JEDEC
4 specifications relevant to 8-Rank and 16-Rank in its infringement contentions. Netlist chose not to
5 do so, and it is too late for Netlist to do so now.").

6 Netlist and Google met and conferred on this issue, and on September 25, 2021, Netlist sent
7 a letter to Google pointing out that the Accused Instrumentalities in Netlist's Amended Infringement
8 Contentions were not limited to 4-rank DIMMs; instead, Netlist had asserted the '912 patent against
9 DDR2 FBDIMMs, DDR3 LRDIMMs, DDR4 NVDIMMs, DDR4 RDIMMs, DDR4 LRDIMMs
10 products, and "products that operate in substantially similar manner." Ex. 7 at 1 (quoting Dkt. 170-
11 3 at 4). In addition, Netlist explained that Google does not publicly disclose its use of specific
12 memory modules, and as a result, Netlist could not have named the complete universe of Google's
13 memory modules without discovery. After receiving Netlist's letter, Google agreed to supplement
14 its responses, and on October 12, 2021, [REDACTED]
15 [REDACTED]. See Ex. 3 at 81-83. Yet Google continued to object to the scope of Netlist's Amended
16 Infringement Contentions. *Id.* ("Google maintains its objection that 8-rank and 16-rank DIMMs are
17 not accused products in this case based on Netlist's June 18, 2021 Amended Infringement
18 Contentions and therefore not relevant to this case.").

19 2. Netlist Acted Diligently in Seeking Amendment

20 Netlist's motion to amend is timely because discovery was stayed pending the outcome of
21 the parties' motions for summary judgment and Google's motion to strike.

22 Pursuant to this Court's order setting deadlines, Netlist and Google filed cross-motions for
23 summary judgment, Dkts. 155, 156, and Google moved separately to strike claim 16, Dkt. 153. On
24 September 3, 2021, this Court stayed discovery on issues other than intervening rights pending
25 resolution of the parties' motions ("Discovery Stay"). Dkt. 192 (noting that it would be desirable
26 to "resolve[] these threshold issues [raised in the parties' motions] before expending additional
27 resources on other aspects of the litigation," and "in the event the intervening rights issues do not
28

1 dispose of the action entirely, resolution of the pending motions may help focus the parties' efforts
2 for the remainder of the action").

3 On May 5, 2022, this Court entered an order granting in part and denying in part Google's
4 Motion for Summary Judgment and Google's Motion to Strike Netlist's Amended Infringement
5 Contentions. Dkt. 258, at 44. The Court also granted Netlist's cross motion for summary judgment.
6 *Id.* This Court's May 5, 2022 Order effectively lifted the Discovery Stay, and Netlist promptly filed
7 this motion for leave to serve amended infringement contentions to make absolutely clear that its
8 contentions include 8-rank and 16-rank DIMMs. Netlist acts diligently by bringing this motion 11
9 days after the Court entered a decision on the parties' pending motions and lifted the Discovery
10 Stay. *See, e.g., Apple Inc. v. Samsung Elecs. Co.*, No. 12-cv-630, 2012 WL 5632618, at *3 (N.D.
11 Cal. Nov. 15, 2012) (granting plaintiff's motion to amend the infringement contentions to accuse
12 new products filed on October 5, 2012, several months after the defendant released its new products
13 Samsung S III to the market on June 20, 2012).

14 Netlist anticipates that Google will argue that Netlist should have accused 8-rank and 16-
15 rank DIMMs in the Amended Infringement Contentions along with the 4-Rank products and
16 alternatively, that Netlist should have moved to amend when it first became aware of [REDACTED]
17 [REDACTED] in July 2021. Both arguments should be rejected.

18 *First*, Netlist's Amended Infringement Contentions did not limit the accused
19 instrumentalities to 4-rank products. For instance, the Accused Instrumentalities section provides:

20 Claim 16 of the '912 Patent: The memory modules incorporated in Google's servers
21 include, without limitation, memory modules compliant with certain portions of the
22 JEDEC Solid State Technology Association ("JEDEC") standards and specifications
23 for Double Data Rate 4 ("DDR4") Synchronous DRAM ("SDRAM") Registered
24 Dual In-Line Memory Modules ("RDIMMs"), DDR4 SDRAM Load Reduced Dual
In-Line Memory Modules ("LRDIMMs") and DDR4 SDRAM Non-Volatile Dual
In-Line Memory Modules ("NVDIMMs"), and ***products that operate in
substantially similar manner.***

25 *See* Dkt. 170-3 at 4-5 (emphasis added). Netlist reasonably believed that 4-rank, 8-rank, and 16-
26 rank DIMMs fell within the scope of its definition of the accused instrumentalities, until this Court's
27 May 5, 2022 Order stated otherwise. Thus, Netlist was diligent in seeking leave to amend. *See*
28

1 *XpertUniverse, Inc. v. Cisco Sys., Inc.*, No. 17-cv-3848-RS, 2019 WL 3413287, at *4 (N.D. Cal.
2 July 29, 2019) (finding that the plaintiff diligently investigated the basis for its amendment to assert
3 products not publicly disclosed by the defendant and timely moved to amend its infringing
4 contentions two weeks after the stay on this case was lifted).

5 Second, Netlist repeatedly made clear to Google in correspondence that its contentions
6 encompassed 8-rank and 16-rank DIMMs. *See, e.g.*, Ex. 6 at 2 (August 20, 2021 Strabone Email to
7 Tse) (“However, our discovery requests seek information into all memory modules that Google
8 uses, makes, has made, etc. or has used, made, had made, etc. It is improper for Google to limit its
9 responses how it sees fit. This is especially true given that Netlist has accused products that operate
10 in a substantially similar manner. For example, is Google excluding 8-Rank and 16-Rank DIMMs
11 from its responses? If Google is unwilling to be forthcoming with respect to its use of memory
12 modules beyond what Google deems to be accused, we will need to seek relief with the Court.”);
13 Ex. 7 at 5 (September 25, 2021 Letter attached to Sheasby email to Acharya) (“[Netlist’s] Amended
14 Infringement Contentions accuse DDR4 RDIMMs, DDR4 LRDIMMs, DDR4 NVDIMMs, DDR3
15 LRDIMMs, DDR2 FBDIMMs that meet certain portions of JEDEC standards, and “*products that*
16 *operate in substantially similar manner*” The contentions do not limit themselves to what
17 Google is defining arbitrarily as ‘4-Rank’ as distinct from 8-rank or 16-rank.”).

18 In conclusion, Netlist diligently investigated Google’s use of 8-rank and 16-rank DIMMs
19 and moved to amend 11 days after this Court interpreted Netlist’s Amended Infringement
20 Contentions as not currently accusing 8-rank and 16-rank DDR4 DIMMs.

21 **B. Google Would Not Suffer Prejudice If Netlist Were Allowed to Amend**

22 Google would not suffer prejudice if Netlist were granted leave to amend its infringement
23 contentions. First, this case is still at an early stage, as Google has conceded. Dkt. 206 at 7 (“This
24 case was stayed for over ten years between January 26, 2011 and February 17, 2021, and therefore
25 this case is still in its early stages.”). Google has not filed its invalidity contentions, the parties have
26 not submitted any claim construction briefing, and no claim construction hearing has been held in
27 this case. Google therefore still can address Netlist’s proposed amendment in its forthcoming
28 invalidity contentions. *See Facebook, Inc. v. BlackBerry Ltd.*, No. 18-cv-5434, 2019 WL 8013872,

1 at *9 (N.D. Cal. Sept. 17, 2019) (recommending granting Facebook leave to amend its infringement
2 contentions based in part on the court’s determination that “any potential prejudice regarding the
3 timing of Facebook’s proposed amendments would be cured by granting BlackBerry leave to
4 supplement its invalidity contentions”).

5 Google has ample opportunity to conduct discovery. The Court stayed discovery in this case
6 first pending the decade-long reexamination of the ’912 patent, Dkt. 68, and later pending this
7 Court’s decision resolving the parties’ threshold motions on intervening rights. Dkt. 192. The
8 parties only conducted limited discovery regarding Google’s intervening rights defense and no
9 discovery cutoff has been set by the Court. Allowing Netlist to amend its infringement contentions
10 would not prejudice Google. *See Tech. Licensing Corp. v. Blackmagic Design Pty Ltd.*, No. 13-cv-
11 05184, 2014 WL 5499511, at *3 (N.D. Cal. Oct. 30, 2014) (“On balance the Court finds that
12 amendment of TLC’s infringement contentions is appropriate. The case is in the early stages of
13 litigation; no discovery has yet been conducted, and the District Court has not yet set a date for the
14 close of fact discovery, nor for the close of expert discovery or trial.”); *Simpson Strong-Tie Co.,*
15 *Inc. v. Oz-Post Int’l, LLC*, No. 18-cv-1188, 2019 WL 8403819, at *3 (N.D. Cal. Apr. 1, 2019)
16 (granting leave to amend where the plaintiff attempted to amend “before claim construction had
17 occurred and with plenty of time remaining in the discovery period”); *Karl Storz Endoscopy-Am.,*
18 *Inc. v. Stryker Corp.*, No. 14-cv-876-RS (JSC), 2016 WL 7386136, at *6 (N.D. Cal. Dec. 21, 2016)
19 (granting motion for leave to amend infringement contentions where “there is still ample time left
20 for discovery and trial is not set to occur until . . . almost two years from the time when [Plaintiff]
21 first provided its proposed amended infringement contentions”).

22 Second, Netlist’s request for leave to amend is limited—Netlist is not attempting to assert
23 additional claims or revise its infringement theories. Instead, Netlist only seeks to make explicit its
24 assertion against 8-rank and 16-rank DIMMs, which, in any event, “operate in substantially similar
25 manner” as the 4-rank DIMMs already accused. Dkt. 170-3 at 4. For example, as illustrated in
26 Figure 10 from Netlist’s Amended Infringement Contentions, the individual memory devices
27 (DRAM) on the DIMM can be organized on the printed circuit board (“PCB”) in two ranks (“2R”),
28 four ranks (“4R”), eight ranks (“8R”), or sixteen ranks (“16R”):

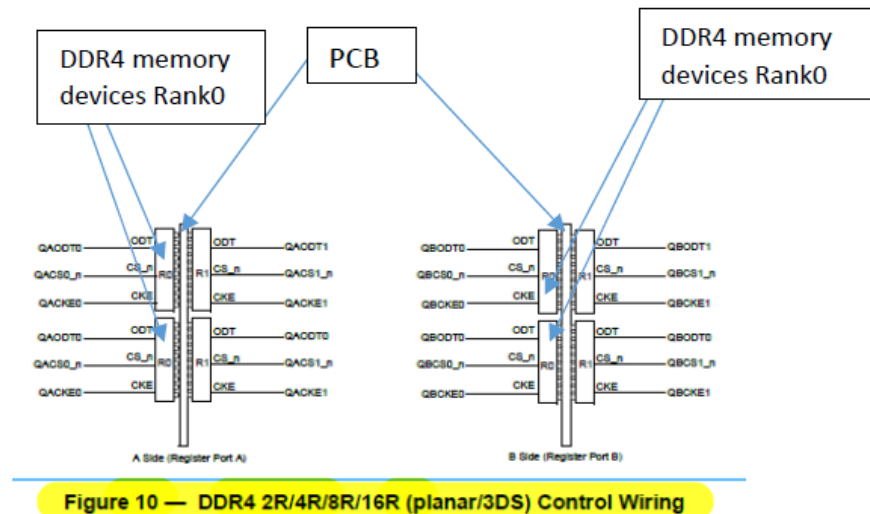


Figure 10 — DDR4 2R/4R/8R/16R (planar/3DS) Control Wiring

Dkt. 212-8 at 11 (“DDR4 2R/4R/8R/16R”).

One way of achieving a DIMM with a “four-rank” organization, for example, is to use only monolithic (*i.e.*, single die) memory devices. A second way of achieving such a “four-rank” organization, or a higher rank structure, is through the use of die-stacking technology where multiple dies are “stacked” in a single memory package. Examples of stacked memory packages include dual-die package (“DDP”) DRAM, which enables stacking of up to two dies per package, or stacked (“3DS”) package DRAM, which enables stacking of two, four, or eight dies per package. *See* Ex. 8 at 3 (Synopsys White Paper) (providing examples of multiple configurations of DDR DIMMs including DIMMs with “individual DRAM dies [] packaged as dual-die (DDP) or quad-die (QDP) packages to support 2 or 4 memory ranks respectively in the DRAM package” and DIMMs with “TSV DRAM packages to have as many as 8 or even 16 stacked memory ranks”). While there are some structural differences between a monolithic and DDP or 3DS packages,¹ these differences are immaterial for purposes of claim 16 of the ’912 patent.

Specifically, claim 16 requires a circuit that “generat[es] a set of output signals in response to the set of input signals, the set of output signals configured to control the first number of DDR memory devices arranged in the first number of ranks.” ’912 Patent (claim 16). As illustrated in

¹ For example, the dies in a 3DS DRAM package are vertically interconnected via a “Through-Silicon Via (TSV) stacking process” and include one memory device that acts as an electrical buffer for the 3DS DRAM package. Ex. 8 at 3 (Synopsys White Paper).

1 Netlist's Amended Infringement Contentions, a 4-rank memory module is capable of generating the
2 required chip-select signals to select the ranks on the module via the Encoded Quad CSMode of the
3 JEDEC DDR4 RCD standard JESD 82-31A. *See, e.g.*, Ex. 9 at 15-16, 19 (excerpt of Netlist's
4 Amended Infringement Contentions). As further provided in the relevant JEDEC standards,
5 DIMMs featuring stacked DRAM (*e.g.*, DDP, or 3DS packages) also generate the required chip-
6 select signals in a manner similar to the Encoded Quad CSMode. *See, e.g.*, Ex. 5 (JESD 82-31A) at
7 3 (providing that one of the two ways to provide the required four chip-select signals for a 4-rank
8 DDR4 DIMM featuring DDP DRAM is "by using two CS inputs and one of the chip ID inputs from
9 the host (DCS[1:0]_n and DC0). See Chapter 2.2.3, '**Encoded QuadCS Mode,**' below") (emphasis
10 added); Ex. 4 (JESD 79-4-1B) at 4 (providing that "[f]or DDR4 3DS devices, the logical ranks are
11 selected by the Chip ID bus C[2:0]" where one chip-select signal is used to decode one or more
12 signals of the chip-ID bus).

13 Netlist's infringement theory as to claim 16 is identical as to all DDR4 DIMMs, whether 4-
14 rank, 8-rank, or 16-rank DDR4 DIMMs. This is borne out by the limited amendments Netlist now
15 seeks. Google would thus not be required to conduct claim construction for additional terms or
16 expand its prior art search. Further, Netlist has put Google on notice of its intent to assert
17 infringement claims against the 8-rank and 16-rank DIMMs during the parties' discovery disputes
18 and meet and confers as early as August 20, 2021. Ex. 6 at 2. Google has sufficient time to
19 investigate these allegations to prepare its invalidity contentions and claim construction briefing.
20 *See XpertUniverse*, 2019 WL 3413287, at *5 (noting that the defendant would not suffer significant
21 prejudice because plaintiff's proposed amendment to its infringement contentions only adds
22 additional accused products that "are alleged to infringe the [Patent in Suit] for essentially the same
23 reasons as the [current accused instrumentalities]—indeed these products appear to be closely
24 related" and the plaintiff has represented "that addition of this product will not require the
25 construction of any additional claims and that it intends to rely on substantially the same theories of
26 infringement set forth in its original infringement contentions").

27 To the extent Google would suffer any prejudice at all from this amendment, the harm is
28 self-inflicted because Google [REDACTED]

1 [REDACTED]. See *Seiko Epson Corp. v. Coretronic Corp.*, No. 06-cv-6946, 2008
2 WL 2563383, at *4 (N.D. Cal. June 23, 2008) (“Coretronic claims they will be unfairly prejudiced
3 if they are required to respond to discovery requests regarding these newly asserted products.
4 However, Seiko was unaware of these products until Coretronic disclosed them to Seiko. In fact,
5 Seiko could not have known of these products until Coretronic’s disclosure. Coretronic’s prejudice,
6 if any, is therefore self-inflicted. Had Coretronic released this information earlier, Seiko could have
7 incorporated these potentially infringing products into its preliminary infringement contentions.”).
8 Here, denying Netlist’s motion for leave to amend to add [REDACTED]—
9 which were disclosed only after Netlist served the operative infringement contention—would only
10 encourage Google to continue resisting discovery of relevant information that Netlist is entitled to.

11 In conclusion, Google would not suffer any prejudice if Netlist makes the proposed limited
12 amendments to its infringement contentions. This provides the Court another independent basis to
13 allow amendment. See *Linex Techs., Inc. v. Hewlett-Packard Co.*, No. 13-cv-159, 2013 WL
14 5955548, at *1 (N.D. Cal. Nov. 6, 2013) (“However, even if the movant was arguably not diligent,
15 the court retains discretion to grant leave to amend.”); see also *Apple*, 2012 WL 5632618, at
16 *6 (granting leave to amend infringement contentions, even though court found plaintiff failed to
17 establish diligence, because of lack of prejudice to the defendant).

18 **IV. CONCLUSION**

19 For the foregoing reasons, Netlist should be allowed to amend its infringement contentions
20 to assert claims explicitly against 8-rank and 16-rank DDR4 DIMMs.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on May 17, 2022, I caused the electronic filing of the foregoing with the Clerk of the Court using the CM/ECF system, which will automatically email notification of such filing to all counsel of record who have made a formal appearance. I further certify that on May 17, 2022, the unredacted version of the foregoing was served on counsel of record who have made a formal appearance.

By: /s/ Yanan Zhao
Yanan Zhao